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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,225	10/28/2003	Makoto Takeuchi	116-031812	5331

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EXAMINER
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HENDRICKSON, STUART L

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/695,225

Applicant(s)

TAKEUCHI ET AL.

Examiner

Stuart Hendrickson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chang et al. article.

Chang shows on pg. 18 a product having the claimed d002 and surface area. Although the description is not identical, the teaching of degree of graphitization implies the presence of the graphitic crystallites. No patentable differences are seen. The features of claim 6 are deemed possessed since they are related to substructure, which is possessed.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,310,762 to Okamura in view of USP 5,338,462 to Abe.

As to claims 1-5 and 7, Okamura discloses a carbon material that is activated to produce crystallites of graphite-like carbon having interlayer distances of 0.365 to 0.385 nm (see column 2, lines 17-21). Overlapping ranges is prima facie evidence of obviousness. See, e.g., In re Malagari, 499 F.2d 1297, 182 U.S.P.Q. 549 (CCPA 1974).

In example 1, column 7, Okamura discloses heat-treating petroleum coke at 750°C for 2 hours in ambient (dry) conditions. The heat-treated coke is then mixed with potassium hydroxide and heat-treated at 800°C. The reference discloses that this carbonization process hinders the progress of activation, thereby limiting the BET specific surface area to about 300 m<sup>2</sup>/g. The low surface area makes it possible for the activated carbon to be used in an electric double layer capacitor that has a large capacitance. Although Okamura discloses a specific surface area that is slightly higher than that claimed (270 m<sup>2</sup>/g), it would have been obvious to one of ordinary skill in the art at the time the invention was made to decrease the specific

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surface area, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. See, e.g., In re Boesch, 617 F.2d 272, 205 U.S.P.Q. 215 (CCPA 1980). The artisan would have been motivated to decrease or optimize the specific surface area by the reasoned explanation that doing so will better allow for the activated carbon to be used in a capacitor having a large capacitance as suggested by Okamura.

Okamura is silent as to whether the alkali is removed. Regarding claim 2, Okamura '762 does not teach or suggest the additional heat treatment in a reducing atmosphere as recited in claim 2. However, Abe '462 does teach heat treatment of an already activated and washed carbon. Abe discloses an acid wash treatment to remove the impurities, followed by a washing step and a heat treatment step that is performed at 400°C – 1,000°C under a reducing atmosphere (see column 14, line 66 – column 15, line 3). It would have been obvious to one of ordinary skill in the art at the time of this invention to subject the activated carbon of Okamura to the washing and extra heat treatment step of Abe in order to produce an enhanced activated carbon as suggested by Abe.

As to claims 6, Okamura is silent regarding the relaxation times. However, the properties of the activated carbon and Okamura are so similar that the relaxation times would be expected to be the same.

Claims 1, and 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,310,762 to Okamura in view either of USP 3,770,625 to Walls or USP 4,392,004 to D'Sidocky.

As to claims 1-5 and 7, Okamura discloses a carbon material that is activated to produce crystallites of graphite-like carbon having interlayer distances of 0.365 to 0.385 nm (see column 2, lines 17-21). Overlapping ranges is prima facie evidence of obviousness. See, e.g., In re Malagari, 499 F.2d 1297, 182 U.S.P.Q. 549 (CCPA 1974).

In example 1, column 7, Okamura discloses heat-treating petroleum coke at 750°C for 2 hours in ambient (dry) conditions. The heat-treated coke is then mixed with potassium

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hydroxide and heat-treated at 800°C. The reference discloses that this carbonization process hinders the progress of activation, thereby limiting the BET specific surface area to about 300 m<sup>2</sup>/g. The low surface area makes it possible for the activated carbon to be used in an electric double layer capacitor that has a large capacitance. Although Okamura discloses a specific surface area that is slightly higher than that claimed (270 m<sup>2</sup>/g), it would have been obvious to one of ordinary skill in the art at the time the invention was made to decrease the specific surface area, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. See, e.g., In re Boesch, 617 F.2d 272, 205 U.S.P.Q. 215 (CCPA 1980). The artisan would have been motivated to decrease or optimize the specific surface area by the reasoned explanation that doing so will allow for the activated carbon to be used in a capacitor having a large capacitance as suggested by Okamura.

Okamura is silent as to whether the alkali is removed. However, '625 to Walls discloses treating an activated carbon with potassium hydroxide, followed by washing with water to remove the potassium hydroxide (see column 3, line 74 – column 4, line 9). D'Sidocky '004 teaches that an acid wash can be used to remove inorganic impurities, resulting in a non-alkaline activated carbon (see column 4, lines 2-5). It would have been obvious to one of ordinary skill in the art at the time of this invention to remove the alkali of Okamura because the Walls and D'Sidocky teach that doing so is desirable.

As to claims 6, Okamura is silent regarding the relaxation times. However, the properties of the activated carbon and Okamura are so similar that the relaxation times would be expected to be the same.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,310,762 to Okamura in view either of USP 3,770,625 to Walls or USP 4,392,004 to D'Sidocky, as applied to claim 1 above, and in further view of USP 5,338,462 to Abe.

Okamura does not disclose the extra heat treatment in a reducing atmosphere of the activated carbon. However, Abe '462 does teach heat treatment of an already activated and

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washed carbon. The heat treatment is performed at 400°C – 1,000°C under a reducing atmosphere (see column 14, line 66 – column 15, line 3). It would have been obvious to one of ordinary skill in the art at the time of this invention to subject the activated carbon of Okumura in view of either of Walls or D'Sidocky to the extra heat treatment step of Abe in order to produce an enhanced activated carbon as suggested by Abe.

Applicant's arguments filed 9/11/06 have been fully considered but they are not persuasive.

The argument that Okamura is not an available reference is not persuasive since it does not appear the patent was owned *at the time of the invention*. If applicant is correct about this reference, then the Chang article is now presented. Applicant is reminded of their duty of disclosure. Note the Oath. The references of the parent application have been considered.

Applicant's **response** necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to examiner Hendrickson at telephone number (571) 272-1351.



Stuart Hendrickson  
examiner Art Unit 1754